

Application No.: 10/681,458

Docket No.: JCLA11538

In The Claims:

Claim 1. (currently amended) A process for manufacturing a semiconductor device, comprising the steps of:

providing a wafer having at least an active device and a photo diode array, wherein the wafer has a metallic interconnect layer that electrically connects with the active device and the photo diode array, the metallic interconnect layer has a plurality of bonding pads located on the surface of the outermost metallic interconnect layer, and the wafer has an illumination area located above the photo diode array;

forming at least a micro-lens over the illumination area of the wafer; and

forming a cutting film over the micro-lens, wherein the cutting film is directly formed on the curve surface of the micro-lens.

Claims 2-3. (cancelled)

Claim 4. (original) The process of claim 1, wherein after the step of forming the cutting film, further comprises a step of patterning the cutting film to form a plurality of openings that exposes the respective bonding pads.

Claim 5. (original) The process of claim 1, wherein after the step of forming the cutting film, further comprises a step of singulating the chips within the wafer.

Claims 6-13 (cancelled)

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Claim 14. (new) A process for manufacturing a semiconductor device, comprising the steps of:

providing a wafer having at least an active device and a photo diode array, wherein the wafer has a metallic interconnect layer that electrically connects with the active device and the photo diode array, the metallic interconnect layer has a plurality of bonding pads located on the surface of the outermost metallic interconnect layer, and the wafer has an illumination area located above the photo diode array;

forming at least a micro-lens over the illumination area of the wafer; and

forming a cutting film over the micro-lens,

wherein before the step of forming the cutting film, further comprises a step of forming a passivation layer over the micro-lens so that the cutting film is formed over the passivation layer instead of directly forming over the micro-lens.

Claim 15. (new) The process of claim 14, wherein after the step of forming the cutting film, further comprises a step of patterning the cutting film to form a plurality of openings that exposes the respective bonding pads.

Claim 16. (new) The process of claim 14, wherein after the step of forming the cutting film, further comprises a step of singulating the chips within the wafer.